

## The Discovery of the Mountain Pygmy-possum *Burramys parvus* on Mount Buller, Victoria

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### Abstract

In 1995 the remains of a Mountain Pygmy-possum were found in a fox scat near Mount Stirling. In the following year potential habitat at Mount Buller and Mount Stirling was trapped and *B. parvus* was detected at Mount Buller. The *B. parvus* population in Victoria consists of four known sub-populations, where the Mount Buller sub-population is the southern-most colony and is relatively isolated. (*The Victorian Naturalist*, 115(4), 1998, 132-134).

### Introduction

The Mountain Pygmy-possum *Burramys parvus* is the only Australian mammal restricted to the alpine and sub-alpine areas. It is endemic to Victoria and New South Wales (Mansergh 1984; Caughley 1986). *Burramys parvus* appears to have very specific habitat requirements, of which there are two components: (i) periglacial boulder streams/rock screes, and (ii) associated vegetation communities, the most distinctive being the Mountain Plum Pine *Podocarpus lawrencei* heathland (Gullan and Norris 1984; Mansergh *et al.* 1989). In Victoria the known distribution of *B. parvus* includes three distinct areas - Mount Higginbotham to Mount Loch, the Bogong High Plains and Mount Bogong. Since each area is isolated by low altitude valleys below 1200 m the Victorian *B. parvus* population is regarded as having three sub-populations (Mansergh *et al.* 1989; Mansergh and Broome 1994).

### Background

In April and May 1995 Biosis Research Pty. Ltd. conducted a fauna survey of Mount Stirling as part of the Mount Stirling Environmental Effects Statement (EES). Analysis of a canine scat collected on the lower slopes of Mount Stirling revealed *B. parvus* remains, most notably the enlarged serrated premolar tooth peculiar to the species (refer to Mansergh and Broome 1994). As the closest known *B. parvus* colony was at Mount Hotham, 60 km away, this evidence suggested that a colony existed in the Mount Stirling-Mount Buller area (Fig. 1).

In November 1995 Biosis conducted further survey work on Mount Stirling as part of the EES. Stanley's Bowl, although having been trapped on at least two previous occasions (by C. Meredith in 1973 and M. McFarlane in 1983) with no captures of *B. parvus*, was identified as the area of most suitable *B. parvus* habitat on Mount Stirling, and 100 Elliot traps were set there for a total of 400 trapnights. However, only the Bush Rat *Rattus fuscipes* and Dusky Antechinus *Antechinus swainsonii* were trapped.

In February 1996 the (then) Department of Conservation and Natural Resources (DCNR) also trapped at Stanley's Bowl for 50 trapnights. Again only Bush Rat and Dusky Antechinus were trapped. In that same month DCNR also set traps on Mount Buller.

### Mount Buller

Trapping at Mount Buller on 20-28 February 1996 resulted in the capture of eight *B. parvus* individuals (Table 1), comprising six juvenile females (Fig. 2), one juvenile male and one adult female.



Fig. 1. Known locations of Mountain Pygmy-possum *Burramys parvus* since 1966.

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Fig. 2. A female juvenile *Burramys parvus* caught from the Federation area, Mount Buller. Photo: Freddie Mercay.

Table 1. Summary of *Burramys parvus* trapping at Mount Buller.

| Area                      | Trapnights | <i>B. parvus</i> captures | Trapping success | Non target species* |
|---------------------------|------------|---------------------------|------------------|---------------------|
| Federation ski slopes     | 260        | 4 <sup>#</sup>            | 1.9              | 103                 |
| Mt. Buller - south summit | 440        | 4                         | 0.9              | 164                 |
| Mt. Buller - north summit | 120        | 0                         | 0                | 35                  |
| <b>Mt. Buller Total</b>   | <b>820</b> | <b>8<sup>#</sup></b>      | <b>1.1</b>       | <b>302</b>          |

\* Bush Rat, Dusky Antechinus, and Agile Antechinus.

<sup>#</sup> One individual was captured on two separate occasions.

All animals appeared to be healthy, falling within the weight range of 24–35 g. Hair samples were collected from each animal as part of genetic research into the species that is being carried out at LaTrobe University. Other mammal species trapped included *R. fuscipes*, *A. swainsonii* and the Agile Antechinus *A. agilis* (previously Brown Antechinus *A. stuartii*; see Dickman *et al.* 1998; Sumner and Dickman 1998). Subsequent trapping has revealed a *Burramys* population of approximately 300 breeding animals (D. Heinze unpubl. data).

Approximately 20.3 ha of *B. parvus* habitat occurs on Mount Buller, including

three distinct patches: Mount Buller South summit - 6.2 ha; Mount Buller North summit - 7.8 ha and Federation ski slopes - 6.2 ha (refer to Fig. 3). Habitat occurs at altitudes from 1300–1700 m. The rock scree at Federation is a mixture of granite and basalt boulders, whereas the Mount Buller summit area consists of boulders of a sedimentary origin. These scree/boulders are unstable and often slip when walked upon.

All of the habitat is located within the Mount Buller Alpine Resort. *Burramys parvus* habitat at the Federation Ski Run has been modified by the removal of vegetation, blasting of boulders, burial of rock

scree, and the construction of maintenance roads. Habitat surrounding the Mount Buller Summit appears not to be modified by ski resort infrastructure.

**Discussion**

With the additional discovery of *B. parvus* on Mount Buller, the Victorian population can be regarded as being made up of four sub-populations. However, it is possible that further populations could exist at other locations that have hitherto been overlooked for intensive surveys, e.g. Mount Speculation and The Cobberas. Based on our current knowledge of the species' distribution, the Mount Buller *B. parvus* population is the most isolated colony.

Results from further trapping on Mount Buller suggest it has a small population, with relatively little suitable habitat available. Mount Stirling, which adjoins Mount Buller, also appears to have very little suitable habitat. The only available habitat on Mt. Stirling consists of granite boulder outcrops near the summit (Stanley's Bowl). Similar outcrops elsewhere contain few, if any, *B. parvus* individuals, e.g. Mount McKay and The Niggerheads (Mansergh *et al.* 1989; Heinze 1995; D. Heinze *pers. obs.*).

Mount Buller is intensively utilised for recreation purposes and, as a result, many areas of *B. parvus* habitat have been modified. While the effect of such change is yet to be determined, the example of Mount Hotham (Mansergh *et al.* 1989) shows that the dispersal and migration patterns may have been affected, and the degradation of habitat may be prevalent.

The Mount Buller *B. parvus* population is certainly unique. Research by the Department of Natural Resources and Environment and LaTrobe University will continue in the future to establish the population biology and dynamics, and will provide data comparable with that which has, or is being carried out on the other sub-populations (Mansergh and Broome 1994; Heinze 1995; DNRE and LaTrobe University, ongoing research).

**Acknowledgements**

Dean Heinze would like to thank many DNRE staff - in particular Ian Mansergh, Mat White and Glen Johnson for their valuable advice and field support; Sandy Jecfott (Alpine Resorts Commission) for organising accommodation, field support and providing survey information; Daryl Rowe for designing the maps; and to William Zormann who assisted with field work. Lance Williams would like to thank Sid Larwill and Charles Meredith (Biosis Research), and Micheal Scroggie and Emma Moysey for field assistance, and Barbara Triggs for scat and hair analysis. Research by Dean Heinze was funded by the Flora and Fauna Branch, Natural Resources and Environment (short term contract).

**References**

Dickman, C.R., Parnaby, H.E., Crowther, M.S. and King, D.H. (1998). *Antechinus agilis* (Marsupialia: Dasyuridae), a new species from the *A. stuartii* complex in south-eastern Australia. *Australian Journal of Zoology* 46(1), 1-26.

Caughley, J. (1986). Distribution and abundance of the Mountain Pygmy-possum, *Burramys parvus*, Broom, in Kosciuszko National Park. *Australian Wildlife Research* 13, 507-517.

Gullan, P.K. and Norris, K.C. (1984). The habitat of the Mountain Pygmy-possum *Burramys parvus* in Victoria. Pp. 417-421. In *Possums and Gliders*, Eds A.P. Smith and I.D. Hume (Surrey Beatty & Sons: Chipping Norton).

Heinze, D.A. (1995). *Burramys parvus* special investigation and monitoring, Bogong High Plains, Jan.-Feb. 1994, Dec.1994 and Feb. 1995 (Department of Conservation and Natural Resources: Unpublished report).

Mansergh, I.M. (1984). Ecological Studies and conservation of *Burramys parvus*. Pp. 545-552. In *Possums and Gliders*, Eds A.P. Smith and I.D. Hume (Surrey Beatty & Sons: Chipping Norton).

Mansergh, I.M. and Broome, L. (1994). 'The Mountain Pygmy-possum of the Australian Alps' (New South Wales University Press: Kensington).

Mansergh, I.M., Kelly, P. and Scotts D.J. (1989). Management strategy and guidelines for the conservation of the Mountain Pygmy-possum (*Burramys parvus*) in Victoria. *Arthur Rylah Institute Environmental Research Technical Report* 66.

Sumner, J. and Dickman, C.R. (1998). Distribution and identity of species in the *Antechinus stuartii*-*A. flavipes* group (Marsupialia: Dasyuridae) in south-eastern Australia. *Australian Journal of Zoology* 46(1), 27-42.

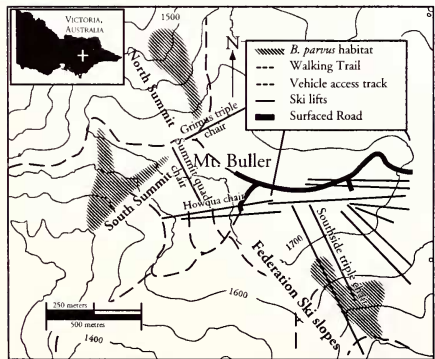


Fig. 3. *Burramys parvus* habitat and trapping sites at Mount Buller.